

LINETYPE LEGEND

	MAJOR PROCESS LINE
	UTILITY LINE
	BUILDING LIMITS
	ENCLOSURE LIMITS
	ALTERNATE LIMITS
	CUST/VENDOR SUPPL. LIMITS
	HIDDEN LINE
	EQUIPMENT OUTLINE
	INSTRUMENT PNEUMATIC LINE
	PROCESS/UTILITY TUBING LINE
	INSTRUMENT CAPILLARY LINE
	ELECTRICAL DATALINK LINE
	ELECTRICAL CONNECTION LINE
	HYDRAULIC LINE
	MECHANICAL LINK LINE

INSULATION LEGEND

	* THICKNESS C=COLD H=HOT PP=PERSONEL PROTECTION
	* THICKNESS c/w TRACING ET=ELEC. TRACE GT=GLYCOL TRACE OT=OIL TRACE ST=STEAM TRACE

VALVE SYMBOL LEGEND

	BALL VALVE
	SPRING RETURN BALL VALVE
	GLOBE VALVE
	GATE VALVE
	CHECK VALVE
	PLUG VALVE
	NEEDLE VALVE
	INLINE CHOKE VALVE
	4-WAY VALVE
	3-WAY VALVE
	BUTTERFLY VALVE
	BASKET/CONE STRAINER
	TEE STRAINER
	Y STRAINER
	RUPTURE VALVE
	PRESSURE RELIEF VALVE
	ANGLE VALVE
	ANGLE CHOKE VALVE
	GAUGE VALVE

VALVE CONNECTION LEGEND

	THRD VALVE
	THRD/SW VALVE
	SW VALVE
	FLANGED VALVE

TOPWORKS SYMBOL LEGEND

	DIAPHRAGM ACTUATOR
	ACTUATOR WITH HANDWHEEL
	ACTUATOR WITH POSITIONER
	PRESS. REDUCING REGULATOR
	BACK PRESS. REGULATOR
	REGULATOR WITH HANDWHEEL
	PISTON ACTUATOR
	ACTUATOR WITH POSITIONER
	ROTARY PISTON ACTUATOR
	ROTARY MOTOR ACTUATOR
	SOLENOID
	SPRING WEIGHTED ACTUATOR
	MANUAL/HAND ACTUATOR

METERING

	METER RUN
	ORIFICE METER
	FLOW CONDITIONER
	VORTEX METER
	POSITIVE DISPLACEMENT METER
	TURBINE/PROPELLER METER
	MASS FLOW METER
	ROTOMETER
	VENTURI
	5-VALVE MANIFOLD

MISC TAG SYMBOL LEGEND

	INSTR. GAS TO AND FROM
	INSTR. AIR TO AND FROM
	RTU
	I/P ELECTRO PNEUMATIC
	-

MISC SYMBOLS LEGEND

	FLANGE / BLIND FLANGE
	BW CAP / THRD CAP
	UNION
	TOL/CPLG w/PLUG
	BREAK
	CONCENTRIC REDUCER
	CONCENTRIC SWAGE
	ECC REDUCERS
	ECC REDUCERS
	SKID EDGE SCARFED VENT
	FLEXIBLE HOSE
	EXPANSION JOINT
	HOSE/CAMLOCK CONNECTION
	SPEC. BLIND-CLOSED/OPEN
	FIELD WELD
	WEIR
	TRAP
	PIPE/TUBING FLOW ARROW
	SPEC/RESPONSIBILITY BREAK
	SPEC/RESPONSIBILITY BREAK
	FLANGED NOZZLE
	MANWAY

	CONNECTION INDICATOR
	LIGHT
	SPEED CONTROL
	PRESSURE ACTUATED CONTROL VALVE (AMOT)
	CONSTRUCTION REVISIONS
	EARTH
	ATO MUFFLER

NOTES

- SHOP INSTALL ADDITIONAL PIPE SUPPORTS WHERE REQ'D.
- SHIP LOOSE ITEMS TO BE BOXED AND SEALED PRIOR TO SHIPMENT.
- PLUG AND PROTECT ALL OUTLETS PRIOR TO SHIPMENT.
- ROUTE PIPING TO ENSURE NO LIQUID TRAPS.
- ALL PIPING MATERIAL TO BE STANDARD TEMP U.N.O.
- HYDROTEST WELDED PIPING TO 1.5 x M.A.W.P.
- WELDED PIPING BUTT WELDS TO BE 100% X-RAYED. U.N.O.
- ALL PIPING AND PROCESS TUBING LINES TO BE TESTED PER B31.3
- INSTRUMENT SUPPLY LINES TO BE TESTED PER ABSA AB-522.
- VESSELS TO BE FABRICATED TO THE LATEST EDITION OF THE ASME SECTION VIII DIVISION 1.
- SURFACE PREP: SSPC-SP6
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- PAINT: 2 COATS CLOVERDALE SERIES 835 DTM, SELF PRIMING, POLYURETHANE ENAMEL, WARM GREY.
- VENT TERMINATION MUST HAVE SCREENS AND POINT DOWNWARDS.
- ELECTRICAL BY NWP.

ORIGINAL

INSTRUMENTATION SYMBOLS AND IDENTIFICATION

LETTER	FIRST LETTER	PRIMARY ELEMENT	INDICATOR	RECORDER	CONTROLLER			CONTROL			CONTROL VALVE	REGULATOR	SELF ACTIVATED VALVE	RELAY OR CONVERTOR
					BLIND	INDICATING	RECORDING	SWITCH	ALARM	*DEFINER				
A	ANALYSIS	AE	AI	AR	AC	AIC	ARC	AT	AS(*)	AA(*)		AV	AY	
B	BURNER COMBUSTION	BE	BI	BR	BC			BT	BS(*)	BA(*)		BV	BY	
BP	BACK PRESSURE										BPV	BPCV		
C	CONDUCTIVITY	CE	CI	CR	CC	CIC	CRC	CT	CS(*)	CA(*)		CV	CY	
D	DENSITY OR MASS	DE	DI	DR	DC	DIC	DRC	DT	DS(*)	DA(*)		DV	DY	
E	VOLTAGE	EE	EI	ER	EC	EIC	ERC	ET	ES(*)	EA(*)		EV	EY	
F	FLOW, FLOW RATE	FE	FI	FR	FC	FIC	FRC	FT	FS(*)	FA(*)		FV	FY	
G	GAUGING	GE	GI	GR	GC	GIC	GRC	GT	GS(*)	GA(*)		GV	GY	
H	HAND				HC	HIC	HRC	HT	HS(*)		HV	HCV	HY	
I	CURRENT	IE	II	IR	IC	IIC	IRC	IT	IS(*)	IA(*)			IY	
J	POWER	JE	JI	JR	JC	JIC	JRC	JT	JS(*)	JA(*)			JY	
K	TIME, SCHEDULE		KI	KR	KC	KIC	KRC	KT	KS(*)	KA(*)			KY	
L	LEVEL	LE	LI	LR	LC	LIC	LRC	LT	LS(*)	LA(*)		LV	LY	
M	MOISTURE, HUMIDITY	ME	MI	MR	MC	MIC	MRC	MT	MS(*)	MA(*)		MV	MY	
N	USER'S CHOICE													
O	USER'S CHOICE													
P	PRESSURE	PE	PI	PR	PC	PIC	PRC	PT	PS(*)	PA(*)		PV	PY	
Q	QUANTITY		QI	QR	QC	QIC	QRC	QT	QS(*)	QA(*)		QV	QY	
R	RADIATION	RE	RI	RR	RC	RIC	RRC	RT	RS(*)	RA(*)		RV	RY	
S	SPEED, FREQUENCY		SI	SR	SC	SIC	SRC	ST	SS(*)	SA(*)		SV	SY	
T	TEMPERATURE	TE	TI	TR	TC	TIC	TRC	TT	TS(*)	TA(*)		TV	TY	
U	MULTI-VARIABLE		UI	UR	UC	UIC	URC					UV	UY	
V	VIBRATION, MECH. ANAL.	VE	VI	VR	VC	VIC	VRC	VT	VS(*)	VA(*)		VV	VY	
W	WEIGHT, FORCE	WE	WI	WR	WC	WIC	WRC	WT	WS(*)	WA(*)		WV	WY	
X	UNCLASSIFIED	XE	XI	XR	XC	XIC	XRC	XT	XS(*)	XA(*)		XV	XY	
Y	EVENT, STATE, PRESENCE												YY	
Z	POSITION, DIMENSION	ZE	ZI	ZR	ZC	ZIC	ZRC	ZT	ZS(*)	ZA(*)		ZV	ZY	

ABBREVIATIONS

A/G	- ABOVE GROUND	GO	- GEAR OPERATED	PC	- PURGE CONNECTION
APP	- APPROVED	GS	- GAS SUPPLY	PD	- POSITIVE DISPLACEMENT
AS	- AIR SUPPLY	GT	- GLYCOL TRACE	PFS	- PROCESS FLOW SHEET
ASSY	- ASSEMBLY	HC	- HOSE CONNECTION	P/I	- PNEUMATIC TO CURRENT
ATM	- ATMOSPHERE	HLL	- HIGH LIQUID LEVEL	P/L	- PIPELINE
BBE	- BEVEL BOTH ENDS	HP	- HIGH POINT	PLC	- PROGRAMMABLE LOGIC CONTR.
BBL	- BARREL	HPV	- HIGH POINT VENT	PP	- PLOT PLAN
BCD	- BOLT CIRCLE DIAMETER	HS	- HYDRAULIC SUPPLY	PO	- PUMP OUT
BD	- BLOWDOWN	HT	- HEAT TRACE	RF	- RAISED FACE
BLD	- BLIND	IA	- INSTRUMENT AIR	RO	- RESTRICTION ORIFICE
BTU	- BRITISH THERMAL UNITS	IC	- INTERNAL COMBUSTION	RP	- REDUCED PORT
CC	- CORROSION COUPON	ID	- INSIDE DIAMETER	RTU	- REMOTE TRANSMITTING UNIT
CP	- CORROSION PROBE	IG	- INSTRUMENT GAS	SC	- SAMPLE CONNECTION
CS	- CARBON STEEL	INJ. PT.	- INJECTION POINT	s/c	- SHOP COAT
CSC	- CAR SEAL CLOSED	I/P	- CURRENT TO PNEUMATIC	S/D	- SHUTDOWN
CSO	- CAR SEAL OPEN	I/S	- INSIDE	SG	- SPECIFIC GRAVITY
c/w	- COMPLETE WITH	LLL	- LOW LIQUID LEVEL	SMLS	- SEAMLESS
DBB	- DOUBLE BLOCK & BLEED	LP	- LOW POINT	SO	- STEAM OUT
DP	- DESIGN PRESSURE	LPD	- LOW POINT DRAIN	SP	- SET POINT
DT	- DESIGN TEMPERATURE	LSD	- LEGAL SUBDIVISION	SS	- STEAM SUPPLY
ES	- ELECTRIC SUPPLY	MAMP	- MAX. ALLOW. WORK PRES.	SS	- STAINLESS STEEL
ESD	- EMERGENCY SHUTDOWN	MDMT	- MIN. DESIGN METAL TEMP.	S/S	- SEAM TO SEAM
ET	- ELECTRICAL TRACE	MCC	- MOTOR CONTROL CENTER	ST	- SOUR TRIM
FC	- FAIL CLOSE	MHP	- MECH. HORSE POWER	TK	- TANK
FFSD	- FLAME FAILURE SHUTDOWN	MFS	- MECHANICAL FLOW SHEET	TSO	- TIGHT SHUT-OFF
FI	- FAIL INTERMEDIATE	NC	- NORMALLY CLOSED	T/T	- TANGENT TO TANGENT
FLG	- FLANGE	NLL	- NORMAL LIQUID LEVEL	TW	- THERMO WELL
FO	- FAIL OPEN	NO	- NORMALLY OPEN	UA	- UNIT ALARM
FRD	- FLOAT RELEASE DEVICE	NS	- NITROGEN SUPPLY	U/G	- UNDER GROUND
FP	- FULL PORT	NSPC	- NON-SLAM PISTON CHECK	UNO	- UNLESS NOTED OTHERWISE
FS	- FORGED STEEL	NTS	- NOT TO SCALE	VH	- VENT HEADER
FW	- FIELD WELD	OD	- OUTSIDE DIAMETER	WS	- WATER SUPPLY
		O/S	- OUTSIDE		

VALVE TAGGING

BALL VALVE (FULL PORT)	- BF
BALL VALVE (REG. PORT)	- BR
BUTTERFLY VALVE	- BU
CHECK VALVE (BALL)	- CB
CHECK VALVE (PISTON)	- CP
CHECK VALVE (SWING)	- CS
CHECK VALVE (WAFER)	- CW
GATE VALVE	- GA
GLOBE VALVE	- GL
STRAINER (BASKET)	- SB
STRAINER (T)	- ST
STRAINER (Y)	- SY
SWAGelok	- SW
NEEDLE VALVE (FEMALE x FEMALE)	- NF
NEEDLE VALVE (MALE x FEMALE)	- NM
MANIFOLD	- MF

LINE TAGGING

DRAIN	- D	0100-0199	PROCESS FLUID
EMULSION	- E	0200-0299	PROCESS GAS
FUEL GAS	- FG	0300-0399	EMULSION
GLYCOL	- G	0400-0499	HYDROCARBONS
HYDROCARBONS	- HC	0500-0599	GLYCOL
INSTRUMENT AIR	- IA	0600-0699	WATER
PROCESS FLUID	- PF	0700-0799	DRAIN
PROCESS GAS	- PG	0800-0899	FUEL GAS
PRESSURE RELIEF	- PR	0900-0999	PRESSURE RELIEF
VENT (ATMOS)	- V	1000-1099	INSTR. AIR
WATER	- W	1100-1199	VENT (NO TESTING)

TAG LEGEND

	LOCALLY MOUNTED	PRIMARY LOC. OR PANEL NORMALLY ACCESS. TO OPER.	AUXILIARY LOC. OR PANEL NORMALLY ACCESS. TO OPER.	PRIMARY LOC. OR PANEL MOUNTED ON BACK OF PANEL	AUXILIARY LOC. OR PANEL MOUNTED ON BACK OF PANEL
DISCRETE					
SHARED DISPLAY, SHARED CONTROL DISTRIBUTION, CONTROL VIDEO DISPLAY					
COMPUTER FUNCTION, SOFTWARE FUNCTION					
PROGRAMMABLE LOGIC CONTROL					

1	JUL 21/14	PA			MODIFIED MAX INLET PRESSURE
0	JUL 16/14	PA	JWC	GH	ISSUED FOR CONSTRUCTION
A	MAY 19/14	CT			ISSUED FOR APPROVAL
REV	DATE	BY	CHK	APP	DESCRIPTION

ISSUED FOR CONSTRUCTION

SIGNED: _____

DATE: _____

W.O.: _____

S/N: _____

ALL DIMENSIONS IN INCHES

NWP INDUSTRIES INC.
Total oilfield supply.

P.O. BOX 6280, INNISFAIL, AB T4G 1S9
PH: (403) 227-4100 FAX: (403) 227-4102

SCALE: N.T.S.

WEIGHT: (APPROX. LBS)

ENCANA CORPORATION
LINEHEATER PACKAGE
2.5 MMBTU/HR 72"O.D. x 26' LG
PIPING AND INSTRUMENTATION DIAGRAM LEGEND

DWN: CT CHK: _____ APP: _____

DATE: MAY 19/14 DATE: JUL 21 2014 DATE: JUL 21 2014

SHEET: 2 OF 2 DWG: 08983-001-P-001 REV: 1